

CLAIMS

- 1        Process for producing a nano-porous polymeric material, characterized in that  
the process comprises the steps of:
  - 5        a.        incorporating a chemical blowing agent in the form of nano-particles  
in the polymeric material,
  - b.        decomposing the chemical blowing agent in its gaseous reaction  
products.
2.        Process according to claim 1, comprising the steps of:
  - 10        a.        incorporating the chemical blowing agent in the polymeric material
  - b.        processing the so obtained polymeric material,
  - c.        at least partly polymerising the polymeric material, steps a, b and c  
are carried out at a temperature below the decomposition  
temperature of the chemical blowing agent,
  - 15        d.        heating the at least partly polymerised polymeric material to a  
temperature above the decomposition temperature of the chemical  
blowing agent.
3.        Process according to claim 2, characterized in that the composition is shaped  
in step b) into a coating.
- 20    4.        Process according to claim 1 or 3, characterized in that the chemical blowing  
agent has a decomposition temperature below 300 °C.
5.        Process according to any one of claims 1-4, characterized in that  
azodicarbonamide is used as the chemical blowing agent.
6.        Process according to any one of claims 2 - 5, characterized in that the  
25        polymeric material is cured by a UV-curing system.
7.        Process according to any one of claims 1 - 6, characterized in that a  
biodegradable polymer is used.
8.        Polymer composition comprising nanoparticles of a chemical blowing agent as  
used in the process according to any one of claims 1-7.
- 30    9.        Nanoparticles of a chemical blowing agent as used in the process according to  
any one of claims 1-7.
10.       Nano-porous polymeric material comprising a polymer having a melting  
temperature and/or a decomposition temperature below 450°C.
11.       Use of the process according to anyone of claims 1-7 for the production of  
35        anti-reflective coatings, a bio-degradable scaffold for tissue engineering, an  
isolation coating, a dielectric interlayer, a membrane, a nano-reactor.